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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,295	09/24/2005	Robert Allan Young	PUS-S004-001	4602

51184 7590 10/17/2007
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EXAMINER

SIGLER, JAY R

ART UNIT	PAPER NUMBER
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4111

MAIL DATE	DELIVERY MODE
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10/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/551,295

Applicant(s)

YOUNG, ROBERT ALLAN

Examiner

Jay R. Sigler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☒ Claim(s) 1,2,5,6 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 23 May 2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

- a. (Specification: Page 6, Line 21) "main drill guide surface **56**"
- b. (Specification: Page 6, Line 25) "lower recesses **60**"
- c. (Specification: Page 7, Line 10) "threaded apertures **100**"

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: **120** and **122**. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the

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examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1, 2, 5, 6, and 10 are objected to because of the following informalities:

d. Concerning claim 1: The language “overlapping hole” does not clearly define what the applicant regards as his invention. Language to specify that the overlapping holes are circular and that they have separate and distinct through axes should be added.

e. Concerning claim 2: “plat” should be --plate--

f. Concerning claim 5: “the multi-faceted surface is a *coaxial series of annular grooves*” seems to contradict the claim language of claim 1, “*threaded aperture with multifaceted surface*” (emphasis added).

g. Concerning claim 6: “claims 1” should be --claim 1--.

h. Concerning claim 10: It is not clear as to which axis “the axis” is referring.

Appropriate correction is required.

4. Claim 15 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim that the multifaceted surface is a threaded surface is viewed as being covered by the claim language in claim 1, “*threaded aperture having multifaceted surface*” (emphasis added).

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1, 32, and 33 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 7, 14, and 15 of copending Application No. 10/809,034. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 32, and 33 are generic to all that is recited in claims 1, 7, 14, and 15 of U.S. Application No. 10/809,034. That is, claims 1, 7, 14, and 15 of U.S. Application No. 10/809,034 fall entirely within the scope of claims 1, 32, and 33 or, in other words, claims 1, 32, and 33 are anticipated by claims 1, 7, 14, and 15 of U.S. Application No. 10/809,034.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3, 6-8, 10-13, 15-17, 19-22, 24-26, 28-30, 32, and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver et al. (U.S. Patent 6,623,486) in view of Freid et al. (U.S. Patent 6,331,179).

Concerning claim 1, Weaver et al. teaches **a bone plate with a longitudinal axis, a bone-contacting bottom side (54) and a top side (52) with holes which communicate through the plate from the top to the bottom side (36), wherein a hole defines a threaded aperture (40) having multifaceted surface** (embodied by the fact that the holes are threaded; multifaceted being taken as having many facets or aspects). Weaver et al. does not teach overlapping holes. Freid et al. teaches overlapping holes 38 with different through axes (Seen in Figure 1) to provide a surgeon with options as to the most desirable location for placement of a fastener (Column 6, Lines 48-50). It would have been obvious to someone of ordinary skill in the art at the time of the invention to use the overlapping holes of Freid et al. in the invention of Weaver et al. to provide a surgeon with options as to the most desirable location for placement of a fastener.

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Concerning claim 6, the bone plate of Weaver et al. includes multiple holes as seen in Figure 10. Concerning claim 10, the holes are aligned on the axis, seen in Figure 21. Concerning claim 11, the holes are in a staggered arrangement from the longitudinal axis as seen in Figure 10. Concerning claim 15, the multifaceted surface includes a threaded surface 40. Concerning claims 19 and 20, the holes are adapted to receive a bone screw 20 with head 22 and bone-engaging thread (on 26) and the head of the bone screw has a plate engaging thread 24.

Concerning claims 24 and 28, the overlapping holes of Freid et al. are comprised of two or three overlapping holes.

Concerning claims 2, 3, 7, 8, 12, 13, 16, 17, 21, 22, 25, 26, 29, and 30. Figures 12, 15 and 16 of Weaver et al. show the holes being formed at angles normal to the top side of the plate or at an angle offset from normal to the top side of the plate.

Concerning claim 32, Weaver et al., in view of Freid et al., fairly suggests the bone plate and bone screw as shown above.

Concerning claims 34 - 36, Weaver et al., in view of Freid et al., fairly suggests the limitations as shown above.

9. Claims 4, 9, 14, 18, 23, 27, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver et al. (U.S. Patent 6,623,486) in view of Freid et al. (U.S. Patent 6,331,179) as applied to claims 1, 6, 11, 15, 19, 24, or 28 above, and further in view of Orbay (U.S. Patent 6,358,250). Weaver et al., in view of Freid et al., fairly

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suggests the invention as claimed (shown above) but does not fairly suggest wherein at least one of the overlapping holes is formed normal to the top side of the plate and at least a second of the overlapping holes is formed at an angle offset from normal to the top side of the plate. Orbay teaches a bone plate with holes that define axes which are oblique relative to each other (Column 3, Lines 52-58; Figure 6, Axes A₁-A₄) to secure the bone fragments in their proper orientation (Column 4, Lines 48-53). It would have been obvious to someone of ordinary skill in the art at the time of the invention to use the holes with axes which are oblique of Orbay in the invention of Weaver et al., in view of Freid et al., in order to secure the bone fragments in their proper orientation.

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver et al. (U.S. Patent 6,623,486) in view of Freid et al. (U.S. Patent 6,331,179) as applied to claim 1 above, and further in view of Wolter (U.S. Patent 4,794,918). Weaver et al., in view of Freid et al., fairly suggests the invention as claimed (shown above) but does not teach wherein the multi-faceted surface is a coaxial series of annular grooves.

Wolter teaches a bone plate and screw where the fastening is engaged through a multiplicity of annular grooves to increase the friction and hence be advantageous (Column 4, Lines 52-55). It would have been obvious to someone of ordinary skill in the art at the time of the invention to use annular grooves in the invention of Weaver et al., in view of Freid et al. and Wolter, to increase the friction and hence be advantageous.

11. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver et al. (U.S. Patent 6,623,486) in view of Freid et al. (U.S. Patent 6,331,179) as applied to claim 32 above, and further in view of Cesarone (U.S. Patent 5,851,207). Weaver et

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al., in view of Freid et al., fairly suggests the invention as claimed (shown above) but does not fairly suggest including a drill guide that is securely engageable to the bone plate. Cesarone teaches a bone plate and drill guide that are securable to one another (Column 3, Lines 48-49) because the locking mechanism demands extremely precise screw alignment and, thus, accurate drill guides are critical to successful operations (Column 1, Lines 59-67). It would have been obvious to someone of ordinary skill in the art at the time of the invention to include a securable drill guide in the invention of Weaver et al., in view of Cesarone, because the locking mechanism demands extremely precise screw alignment and, thus, accurate drill guides are critical to successful operations.

12. Claims 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver et al. (U.S. Patent 6,623,486) in view of Freid et al. (U.S. Patent 6,331,179) and Tepic et al. (U.S. Patent 5,733,287).

Concerning claim 37, Weaver et al., in view of Freid et al., fairly suggests the claimed invention as applied to claim 1 in paragraph 6 above, but does not fairly suggest wherein the bottom side includes recesses located between adjacent threaded apertures and which are substantially located exclusively on the bottom side, the recesses being sized so as to define a cross-section transverse to the longitudinal axis and across the recesses that ensures that a yield strength in bending across the recesses is less than across a threaded aperture. Tepic et al. teaches a bone plate with recesses 13 that are located on the bottom side to reduce the peak stresses (Column 1, Lines 34-36). It would

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have been obvious to someone of ordinary skill in the art at the time of the invention to include the recesses of Tepic et al. in the invention of Weaver et al. in order to reduce the peak stresses.

Concerning claim 38, the recesses of Tepic et al. are substantially rectangular in form (taken to be embodied by the fact that the cross section of the recess would be the same as the cross section 15 which is substantially rectangular, or alternatively embodied by the recesses are taken to be cut out at substantially right angles from the sides and top).

Concerning claim 39, the recesses of Tepic et al. are equally spaced along the longitudinal axis (seen in Figure 8).

Concerning claim 40, Tepic teaches that the total area removed from the bottom side due to the recesses is less than 50% of the total surface area of the bottom side (Seen in Figure 2 where there is no transverse recesses, the total area removed is equal to 0%).

Concerning claim 41, the recesses of Tepic et al. are transverse and extend across the width of the bone plate (Column 2, Lines 58-59).

13. Claims 37, 40, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver et al. (U.S. Patent 6,623,486) in view of Freid et al. (U.S. Patent 6,331,179) and Klau et al. (U.S. Patent 5,002,544).

Concerning claim 37, Weaver et al., in view of Freid et al., fairly suggests the claimed invention as applied to claim 1 in paragraph 6 above, but does not fairly suggest wherein the bottom side includes recesses located between

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adjacent threaded apertures and which are substantially located exclusively on the bottom side, the recesses being sized so as to define a cross-section transverse to the longitudinal axis and across the recesses that ensures that a yield strength in bending across the recesses is less than across a threaded aperture. Klau et al. teaches a bone plate with recesses 10 that are located on the bottom side to allow the resistance to bending in these areas to be less than in the area of the holes (Column 1, Lines 49-52). It would have been obvious to someone of ordinary skill in the art at the time of the invention to include the recesses of Klau et al. in the invention of Weaver et al. in order to allow the resistance to bending in these areas to be less than in the area of the holes.

Concerning claim 42, the recesses of Klau et al. extend from a side of the bone plate transversely toward the longitudinal axis but not across the axis (seen in Figure 9).

Conclusion

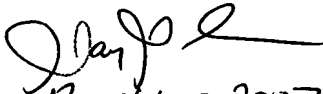
14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Application Publication 2002/0045901 is considered particularly pertinent.

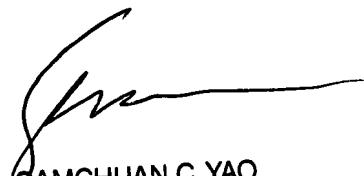
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay R. Sigler whose telephone number is (571) 270-3647. The examiner can normally be reached on Monday through Thursday from 8 AM to 4 PM (EST).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sam Yao can be reached on (571) 272-1224. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


12 October 2007
jrs


SAMCHUAN C. YAO
SUPERVISORY PATENT EXAMINER